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## DESCRIPTIVE AND NORMATIVE SCIENCES<sup>1</sup>

THE distinction between the descriptive and explanatory sciences, on the one hand, and the so-called 'normative' sciences or disciplines, on the other, though evident and even ultimate for common sense, has come to be a seriously puzzling problem for philosophy at the present day. Though in one sense as general as the problem of the relation between the real and the ideal, it also involves many special and technical questions, the discussion of which, though interesting and important, sometimes tends to obscure the main issue. In the present paper, the attempt will be made to deal with the problem from the point of view of methodology, the object being to see if it is not possible, even for those occupying quite different philosophical positions, to agree upon certain general principles that will help all concerned to avoid either the abstract dualism or the specious monism that too often characterizes such discussions.

For common sense the problem can hardly be said to exist at all, since the distinction between the real and the ideal seems self-evident. The real is simply that which *is*; the ideal, on the other hand, by definition implies at least some deviation from reality. It is what, from some point of view, *ought* to be, as opposed to what *is*. Hence, of course, we have sciences which deal with the real, like physics, chemistry, physiology, and psychology; while there are other so-called sciences, like logic, æsthetics, and ethics, which set up certain norms or standards. Thus stated, however, we have a dualism which even common sense and physical science are inclined to look askance at; and the first step in the direction of reflection is usually to hold that science, in the proper sense, deals with the real and only with the real, while the so-called 'normative' sciences or disciplines are more properly arts, the object of which is to attain certain ends that are by no means implied by reality as such.

<sup>1</sup> Read before the American Philosophical Association, at the New York meeting, December 27, 1906.

But the present tendencies of the descriptive and explanatory sciences themselves are calculated to force even common sense, however reluctant, from its original position. The physicist, the chemist, the physiologist, and the psychologist alike, — but especially the psychologist, who is more alive to the problem, — tell us that they by no means profess to give a complete account of concrete experience or reality, but only of experience regarded from a particular and necessarily abstract point of view. It will not even do to say that they deal with different parts of experience or fields of experience ; each representative of a special science is concerned with the whole of experience *so far as it is relevant* to his problem and capable of being dealt with by his methods. Scientific description is progressively technical, and therefore abstract, as the true problems and methods of the science in question gradually become more clearly defined. Moreover, no science of the real, — certainly no developed science, — is merely descriptive, in the narrower sense of the word ; it seeks to explain, *i. e.*, to determine the laws of orderly change from its own point of view. The laws discovered are always at once less and more than mere descriptions of the behavior of reality as such : less, because they describe real processes only from a technical, abstract point of view ; more, because they claim, or at least seek, universal validity. In truth, it is plain, when once clearly stated, that all scientific laws are what the modern logician would call ‘hypothetical universals.’ They do not state that the real process, in the particular case, did or ever will take place thus and so ; they rather state, in perfectly unambiguous terms, that *if* certain conditions are given, and *if* they are the only conditions present, certain results will follow. In fact, this is all that any universal principle can mean, if we keep within our brief.

Even when we take the factual or existential point of view, then, and inquire only what is, our developing science, whatever that may chance to be, will more and more take the form of a rational construction, and so become normative in this sense ; for, given fundamental assumptions, the procedure of reason is always immanently teleological. A principle like the conservation of

energy, for example, is much more than a mere generalization from experience. Physics has simply reached the point where all are perfectly agreed that, in so far as the world can be explained as a mechanical system, the law of the conservation of energy must hold. Whether it holds absolutely is quite another question, for that would imply that the mechanical explanation of the world is the ultimate one, and would make physics equivalent to metaphysics or ontology.

But is the factual method of dealing with experience the only method that can be called objective? Let us for the moment compare the procedure of structural psychology with that of logic or epistemology. The psychologist regards our mental life as a more or less continuous process, intimately connected with, if not causally related to, certain more obviously continuous physical and physiological processes, the latter, of course, being primarily those of the central nervous system. The inner like the outer process he regards as a series of events to be explained, the events being arbitrarily isolated stages of a process really or approximately continuous. But, in order to be able to deal effectively with these events of the inner life, it is highly convenient, if not necessary, to assume that the content of consciousness at any given time is analyzable into so-called 'conscious elements,' — and so the technical method is gradually developed. The problem thus becomes, now one as to mental content, now one as to sequence of states of consciousness; and these, together with the physical and physiological correlations involved, are all that concern us, so long as we maintain this technical point of view.

The accurate and highly significant results obtained more than justify this highly abstract procedure; but the tyro might sadly misinterpret these results, so laboriously obtained by the specialist. He might say: "If the psychologist has given us a fairly exhaustive account of the total content of consciousness, what more remains to be done, except to carry still further the investigations so prosperously begun?" But the very expression 'content of consciousness' is ambiguous; for to be in consciousness is not necessarily to be a particular fact or analyzable element in consciousness. The psychologist is giving us all that he pro-

fesses to give, an account of our mental life regarded as a series of events; but he has deliberately and scrupulously left out what, for the logician or epistemologist, is the all-important matter, viz., the meanings or rational implications of consciousness. Not facts, then, but meanings, are the subject-matter of epistemology; not causal connections, but rational implications are the matters to be investigated. And just as the so-called 'facts' of psychology are only arbitrarily isolated stages of a relatively continuous process, so the particular meanings of epistemology can only be understood as parts or members of a system of meanings.

As regards objectivity, then, there is plainly no advantage on the side of psychology as against logic or epistemology. Each is dealing with our real mental life, but each from its own technical and necessarily abstract point of view. But when we come to the matter of classification, an unexpected difficulty confronts us, if we accept the conventional distinction between descriptive and normative sciences. Structural psychology is undoubtedly a descriptive and explanatory science; but both description and explanation are from such a technical and deliberately abstract point of view, — the point of view of a highly developed science, — that the procedure of psychology might be termed, in this sense, normative as well. On the other hand, traditional formal logic has commonly been regarded as the typical normative science, except by those who have preferred to regard it as an art rather than as a science. But purely formal logic has lost much of its prestige, and what shall be done with modern logic, which has become transformed into theory of knowledge? Its procedure is in every way as business-like as that of psychology. It primarily seeks to explain what knowledge is and what it implies. But since it is concerned with the organization of knowledge, and since the organization of knowledge at any given stage of development is imperfect, it is bound to form the more or less definite conception of an ideal knowledge (proximate, if not ultimate), in which the antinomies which perplex us at present shall be resolved. Then we might say that modern logic is at once explanatory and normative; but this does not mean that there is

a logic that is explanatory and another logic that is normative, for the science is plainly one. Moreover, as knowledge develops in the direction of its ideal of organization, it becomes as a result more and more real. In spite of prepossessions to the contrary, this is a highly suggestive example, which goes to prove that, in some fields of investigation, at any rate, the real and the ideal tend to converge.

I am well aware that, in speaking of metaphysics from the methodological point of view, one must exercise more caution; for here we are confronted with two difficulties: (1) The question which has often been raised as to the relation between theory of knowledge and theory of reality; and (2) the evidently divergent tendencies of recent metaphysical theory. Even here, however, it seems to me that our present differences of opinion are not so hopeless as would at first appear.

Let us first consider the relation between epistemology and metaphysics. All are familiar with the accusation brought against English Neo-Hegelianism by Professor Pringle-Pattison and others, that these exponents of modern idealism have, without any warrant whatever, transformed theory of knowledge into theory of reality, and this to the great disadvantage of both disciplines. I have not the slightest wish, in the present paper, to attempt to vindicate any particular form of metaphysical theory; but it seems fair to ask ourselves whether this particular criticism has the cogency that it appeared to have twenty years ago. Indeed, the question is highly relevant to this discussion, for it really concerns pragmatism quite as much as modern idealism.

If we accept the antithesis of appearance and reality as final, as was practically done by Kant, — if we take his philosophy literally, — and has been done since by certain too orthodox followers of Kant, then, indeed, there is a great gulf fixed between epistemology and metaphysics. But the logic of the position is not far to seek. The sharp and definitive line of cleavage between epistemology and metaphysics merely corresponds to the absolute discrepancy assumed to exist between the world of possible experience and the world of things-in-themselves. If our knowl-

edge is not, in any true sense, knowledge of the real, then, of course, theory of knowledge has little or nothing to do with the theory of the ultimate real. But who holds such a position to-day? If one thing more than another characterizes philosophical speculation at the present time, it is the assumption, implicit or explicit, that experience and reality for all practical purposes are the same. Of course we do not all have the same conception of experience, — nobody would claim that, — but this constant and insistent reference to experience is a most hopeful sign; for it suggests that controversy may give way to coöperation when we come to understand each other better, and when the larger issues are more clearly and judicially defined. Now, in so far as we do keep to experience in our philosophical investigations, it seems to me *prima facie* impossible to make any sharp distinction between theory of knowledge and theory of reality. Even for Kant, of course, theory of knowledge was at the same time theory of the organic constitution of the world of possible experience.

Now, as to the second question: In how far do existing differences in metaphysical theory commit us to seriously divergent conclusions as to the position of metaphysics in the general classification of the sciences? More particularly, can we come to some working agreement as to whether metaphysics should be regarded as a science of the real or a science of the ideal? It seems fairer to put the question in this more general form; for, if we ask whether metaphysics is to be regarded as merely descriptive and explanatory, on the one hand, or merely normative, on the other, it is only too obvious that our original hard and fast division breaks down. We should probably have to answer that metaphysics was neither the one nor the other; but such an answer would not be particularly enlightening, for the larger and more significant question would remain. If we ask this larger and more significant question, — whether metaphysics is a science of the real or of the ideal, — the distinction again seems to break down, but with the opposite result; for it would seem that we can hardly deny that it is both. If metaphysics is a science at all, it must surely be a science of the real, since reality as such

is the very matter investigated. So far we would seem to be committed to substantial agreement. But is or is not metaphysics a science also of the ideal? If by ideal is here meant that which is opposed to the real, we may answer categorically that metaphysics is decidedly not, in that sense, a science of the ideal. The true problem, of course, is whether reality as such involves the ideal. There can be no question that for traditional idealism this is the logical conclusion of the method adopted, though this is far enough from saying that the real and the ideal can be mathematically equated or carelessly identified. In practice, we are driven to admit 'degrees of reality,' these corresponding to *degrees of achieved organization of experience*. In the case of pragmatism or realism, in their more recent forms, the problem would present much greater difficulties; but even in the case of those methods, I would venture to suggest that the conception of 'degrees of reality' is by no means without significance, so long as the reference is to concrete experience, and that the 'degrees of reality' here also correspond to degrees of achieved organization of experience. In short, while we explain the organization of experience so differently, the degree of that organization is for us all alike the important thing; and the organization of experience is always from the point of view of a proximate, even if not ultimate ideal, no matter how specifically that may be defined in terms of practical activity or the objective conditions that determine and limit practical activity. In the case of metaphysics, then, as in the case of all the other sciences considered, we find a science of the real developed in terms of its own immanent ideal.

Thus far, it will be remembered, we have considered but one of the so-called 'normative' sciences, viz., logic; but in that case the conventional distinction did not seem to hold. We found, indeed, that the science has an ideal side, but that this is not opposed to the reality of thought and experience, being rather developed with a view to the objectivity of experience as a whole. When we come to consider ethics, which is commonly regarded as the normative science *par excellence*, we might seem to be confronted with hopeless differences of opinion; for we have



popularly accredited moralists whose positions range all the way from the most reckless and impracticable idealism to a degree of naturalism that logically involves as its foundation nothing less than crass materialism. But here also it seems reasonable to hope that serious students of philosophy may come to an understanding with each other. Is it too much to say that the day of strictly *a priori* constructions of ethical theory is forever past? An ideal that stands opposed to reality, — *i. e.*, to reality in the true and ultimate sense, — is self-condemned; only when found to be immanent in reality itself can it command the respect of any thinking man. So far from ethics not being concerned with reality, it is audacious enough to investigate the most real thing in the world, *viz.*, human conduct. The enterprise is a sobering one at best; but is it not inexcusable temerity to dogmatize about what is most vital, most concrete in experience, without ever seriously attempting to understand the objective relations involved?

To experience, then, ethics must assuredly go, — like all other sciences, for that matter, including metaphysics itself, — and, in dealing with experience, ethics will of course receive much help from other sciences. It must always be remembered, however, that these other sciences do not exhibit concrete experience, but rather experience interpreted, in each case, from a highly technical point of view. In its deference to other sciences, — *e. g.*, anthropology, social psychology, and sociology, — ethics must not forget to have a point of view of its own; otherwise it will not take even the first step toward becoming a science on its own account. What that point of view should be, need not, of course, be discussed here; but at any rate it is plain that the categories of ethics must be teleological, rather than quasi-mechanical. If all proximate ends are imperfectly rational purposes, the ultimate and truly rational end, whatever that may be, cannot be other than purposive itself.

But this very mention of an ultimate end of conduct, — if, indeed, we may speak of an ultimate end, — will at once suggest that here, at last, we have a science that is truly normative. We have seen, however, that all sciences, *qua* sciences, are in a sense normative, since they all interpret the organic unity of experi-

ence in terms of regulative ideals of their own. Yet they are all dealing with reality, and the ideals in question would be spurious, were they not potent means of dealing with reality on a comprehensive plan. Such, if I am not mistaken, is the case with ethics. It does not create its own material or subject-matter any more than do other sciences. It starts, or should start, with an exhaustive examination of actual human nature and the objective relations involved in society at its different stages of development. It does not ask why men should desire, and will, and act, any more than it asks why they should exist at all. Human desires and volitions, always involving some proximate purpose, are the matters to be investigated. But ethics, like theory of knowledge, must regard experience as, at any rate potentially, an organic whole; and conduct, like thought, becomes more truly itself in proportion to the degree of achieved organization. So there is presumably an ideal of conduct, as there is presumably an ideal of knowledge; but both are immanent in the process of experience itself. And, as we saw no way of drawing a hard and fast line between theory of knowledge and metaphysics, provided we accept experience as itself the real, so, for precisely the same reasons, it seems impossible to decide beforehand that ethics is, and must be, merely a natural science.

To conclude, then, it seems fair to say that there are no distinctively normative sciences, in the conventional sense of the term 'normative.' All sciences, *qua* sciences, have to do with the real, though each regards reality from a technical, and therefore more or less abstract, point of view, that becomes in a sense normative for its own procedure. Of course it does not follow that, since all sciences are abstract, they are all equally abstract; for the so-called 'exact sciences' are of necessity abstract in proportion to the degree of their exactness. One might say that this is the price they pay for their exactness, — a consideration which is frequently overlooked. On the other hand, these more abstract sciences are not necessarily on a lower plane than those which are relatively concrete; they only take this position when they put themselves in the wrong by making ontological assumptions. The true distinction between the so-called 'descriptive'

and the so-called 'normative' sciences is, that the former take the factual, the latter the teleological point of view, *i. e.*, the point of view of immanent rationality and purposiveness ; but objectivity of treatment is as possible in the one case as in the other. In fact, we may go further, and claim that true objectivity, which necessarily concerns the coherence of experience as a whole, must always, in the end, be exhibited in teleological terms. Not that the teleological point of view can possibly supplant the factual in the procedure of the so-called 'exact sciences,' — the very suggestion is, of course, absurd, — but we must clearly recognize that the factual standpoint is far more abstract than the teleological standpoint, and in that proportion far less true to the nature of concrete experience. In a word, the difference is that between explaining experience from without and from within.

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